

WHAT IS CLAIMED IS:

1. A communications system comprising:

5 a gateway operable to receive a first packet addressed to a mobile unit, to determine a multicast address associated with the mobile unit, to generate a second packet having information from the first packet and addressed to the multicast address, and to communicate the second packet to a packet network; and

10 a plurality of base transceiver stations each operable to receive the second packet from the packet network, to determine the mobile unit identified by the second packet, and to communicate information from the second packet to the mobile unit.

15 2. The system of Claim 1, wherein the first packet contains voice information for a communications session between the mobile unit and a remote device generating the voice information.

3. The system of Claim 1, wherein the base transceiver stations each transmit information from the second packet to the mobile unit to facilitate soft handoff of a communications session.

20 4. The system of Claim 1, wherein the gateway is further operable to generate the second packet by readdressing the first packet to the multicast address.

5. The system of Claim 1, further comprising a roam management module operable to:

25 monitor a wireless link between the mobile unit and the base transceiver stations;

determine that radio link quality of the wireless link has fallen below a threshold; and

30 withdraw the selected base transceiver station from a multicast group associated with the mobile unit.

062891.0432

6. The system of Claim 5, wherein the roam management module is further operable to:

direct the selected base transceiver station to discontinue communications with the mobile unit; and

5 direct the mobile unit to discontinue communications with the selected base transceiver station.

7. The system of Claim 5, wherein the roam management module determines that radio link quality of the wireless link has fallen below a threshold by  
10 determining that a signal strength has fallen below the threshold for a predetermined period of time.

8. The system of Claim 1, further comprising a roam management module operable to:

15 monitor wireless links between the base transceiver stations and the mobile unit;

determine that radio link quality for a wireless link between a selected one of the base transceiver stations and the mobile unit has exceeded a threshold; and

20 register the selected base transceiver station with a multicast group associated with the mobile unit.

9. The system of Claim 8, wherein the roam management module is further operable to

25 direct the selected base transceiver station to communicate with the mobile unit; and

direct the mobile unit to communicate with the selected base transceiver station.

10. A base transceiver station comprising:

a network interface operable to receive multicast packets from a packet network, wherein the base transceiver station is a member of a multicast group receiving the multicast packets;

5 a processor operable to determine a mobile unit identified by the multicast packets; and

a wireless interface operable to communicate information from the multicast packets to the mobile unit.

10 11. The base transceiver station of Claim 10, wherein:

the processor is further operable to extract packets encapsulated by the multicast packets; and

the wireless interface is further operable to communicate the extracted packets to the mobile unit.

15 12. The base transceiver stations of Claim 11, wherein the encapsulated packets each comprises an Internet protocol (IP) address of the mobile unit.

20 13. The base transceiver station of Claim 10, wherein the information from the multicast packets comprises voice information associated with a communications session.

25 14. The base transceiver station of Claim 10, wherein the processor is further operable to monitor radio link quality for a wireless link with the mobile unit and withdraw from the multicast group based on the radio link quality.

062891.0432

15. The base transceiver station of Claim 10, wherein the processor is further operable to monitor radio link qualities for wireless links with a plurality of mobile units and register for a multicast group associated with a selected one of the mobile units based on the radio link quality for the wireless link with the selected mobile unit.

16. The base transceiver station of Claim 10, wherein the base transceiver station is one of a plurality of base transceiver stations communicating with the mobile unit using code division multiple access (CDMA) communications protocols, wherein the base transceiver stations are each registered for the multicast group.

17. A gateway comprising:  
a first interface operable to receive a first packet addressed to a mobile unit;  
a processor operable to determine a multicast address associated with the  
mobile unit and to generate a second packet addressed to the multicast address, the  
5 second packet encoding information from the first packet; and  
a second interface operable to communicate the second packet to a packet  
network.

18. The gateway of Claim 17, wherein the multicast address corresponds  
10 to a multicast group having a plurality of base transceiver stations as members.

19. The gateway of Claim 17, further comprising a memory storing  
information associating a plurality of mobile units to multicast addresses.

20. The gateway of Claim 17, further operable to generate the second  
15 packet by readdressing the first packet to the multicast address.

21. The gateway of Claim 17, further operable to generate the second  
packet by encapsulating the first packet as a payload of the second packet.

20

22. A method for processing multicast packets comprising:  
registering for a multicast group associated with a mobile unit;  
receiving multicast packets for the multicast group; and  
communicating information from the multicast packets to the mobile unit  
5 using wireless communications protocols.

23. The method of Claim 22, further comprising extracting packets  
encapsulated by the multicast packets and communicating the extracted packets to the  
mobile unit.  
10

24. The method of Claim 23, wherein the encapsulated packets each  
comprises an Internet protocol (IP) address of the mobile unit.

25. The method of Claim 22, wherein the information from the multicast  
15 packets comprises voice information associated with a communications session.

26. The method of Claim 22, further comprising monitoring radio link  
quality for a wireless link with the mobile unit and withdrawing from the multicast  
group associated with the mobile unit based on the radio link quality.  
20

27. The method of Claim 22, further comprising monitoring radio link  
qualities for wireless links with a plurality of mobile units and registering for a  
multicast group associated with a selected one of the mobile units based on the radio  
link quality of the wireless link with the selected mobile unit.  
25

28. The method of Claim 22, wherein the base transceiver station is one of  
a plurality of base transceiver stations communicating with the mobile unit using code  
division multiple access (CDMA) communications protocols, wherein the base  
transceiver stations are each registered for the multicast group.  
30

29. Software for processing multicast packets, the software embodied on a computer readable medium and operable to:

register for a multicast group associated with a mobile unit;

receive multicast packets for the multicast group; and

5 communicate information from the multicast packets to the mobile unit using wireless communications protocols.

30. The software of Claim 29, further operable to extract packets encapsulated by the multicast packets and communicating the extracted packets to the  
10 mobile unit.

31. The software of Claim 30, wherein each of the encapsulated packets comprises an Internet protocol (IP) address of the mobile unit.

32. The software of Claim 29, wherein the information from the multicast  
15 packets comprises voice information associated with a communications session.

33. The software of Claim 29, further operable to monitor radio link quality for a wireless link with the mobile unit and to withdraw from the multicast  
20 group associated with the mobile unit based on the radio link quality.

34. The software of Claim 29, further operable to monitor radio link qualities for wireless links with a plurality of mobile units and to register for a multicast group associated with a selected one of the mobile units based on the radio  
25 link quality of the wireless link with the selected mobile unit.

35. The software of Claim 29, wherein the base transceiver station is one of a plurality of base transceiver stations communicating with the mobile unit using code division multiple access (CDMA) communications protocols, wherein the base  
30 transceiver stations are each registered for the multicast group.

36. A base transceiver station comprising:  
means for registering for a multicast group associated with a mobile unit;  
means for receiving multicast packets for the multicast group; and  
means for communicating information from the multicast packets to the  
5 mobile unit using wireless communications protocols.

37. The base transceiver station of Claim 36, further comprising means for  
extracting packets encapsulated by the multicast packets and means for  
communicating the extracted packets to the mobile unit.

38. The base transceiver station of Claim 37, wherein the encapsulated  
packets each comprises an Internet protocol (IP) address of the mobile unit.

39. The base transceiver station of Claim 36, wherein the information from  
15 the multicast packets comprises voice information associated with a communications  
session.

40. The base transceiver station of Claim 36, further comprising means for  
monitoring radio link quality for a wireless link with the mobile unit and means for  
20 withdrawing from the multicast group associated with the mobile unit based on the  
radio link quality.

41. The base transceiver station of Claim 36, further comprising means for  
monitoring radio link qualities for wireless links with a plurality of mobile units and  
25 means for registering for a multicast group associated with a selected one of the  
mobile units based on the radio link quality of the wireless link with the selected  
mobile unit.



